

# A Review of the South American Catfish Tribe Hoplomyzontini (Pisces, Aspredinidae), with Descriptions of New Species from Ecuador

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## Abstract

Two new species of aspredinid catfishes belonging to the tribe Hoplomyzontini were collected on expeditions to the Río Napo basin, eastern Ecuador, in 1981 and 1983. *Hoplomyzon papillatus*, new species, is distinguished from all known aspredinids by having (1) five stout papillae along the upper lip and (2) mentum with two pairs of longer barbels and about 36 short, papillae-like barbels; it differs further from all other species of Hoplomyzontini by having the snout deeply emarginate at midline. *Ernstichthys intonsus*, a new species collected by trawling in the Río Napo mainstream, is distinguished from all known aspredinids by having (1) a branched maxillary barbel with about 15 threadlike secondary barbels; (2) more than 100 slender barbels on mentum, breast, and belly; (3) anterolateral branch of pelvic bone expanded to form a superficial plate extending anteriorly to meet a relatively short coracoid process; and (4) dorsal fin i,7 (vs. dorsal fin i,1–6 in all other aspredinids). The tribe Hoplomyzontini is revised, and a key to genera and species is provided. *Dupouyichthys* Schultz is removed from the synonymy of *Hoplomyzon* Myers, and *Hoplomyzon megistus* Orcés is reassigned to the genus *Ernstichthys* Fernández-Yépez.

predinidos por tener (1) cinco papilas cortas y robustas a lo largo del labio superior, y (2) mentón con dos pares de barbillas relativamente largas rodeadas por más o menos 36 barbillas cortas como papilas; además difiere de las todas las otras especies de Hoplomyzontini por tener el hocico profundamente emarginado en la línea media. *Ernstichthys intonsus*, una nueva especie colectada mediante una rastra en medio del curso mayor del río Napo, se distingue de todos los aspredinidos conocidos por tener (1) barbillas maxilares ramificadas con más o menos 15 filamentos secundarios, (2) más que 100 barbillas en el mentón, pecho y vientre, (3) rama anterolateral del hueso pélvico expandida formando una placa superficial que se extiende anteriormente hasta encontrar el relativamente corto proceso coracoide, y (4) aleta dorsal i,7 (versus aleta dorsal i,1–6 en todos los otros aspredinidos). La tribu Hoplomyzontini es revisada y una clave de géneros y especies es provista. *Dupouyichthys* Schultz es removido de la sinonimia de *Hoplomyzon* Myers y *Hoplomyzon megistus* Orcés es reasignado al género *Ernstichthys* Fernández-Yépez.

## Resumen

Dos especies nuevas de los bagres aspredinidos de la tribu Hoplomyzontini fueron colectados en expediciones a la cuenca del río Napo, Ecuador oriental, en 1981 y 1983. *Hoplomyzon papillatus*, especie nueva, se distingue de todos los otros as-

## Introduction

An expedition to the Río Napo basin of eastern Ecuador in late 1981 provided an opportunity to sample the deeper channels of an Amazonian headwater tributary using a bottom trawl. Strong currents and abundant snags made trawling extremely difficult, but eventually, several rare and undescribed fishes were collected from the never-

before-sampled depths of the Río Napo mainstream. The most spectacular of these new deep-river fishes represents an undescribed species of *Ernstichthys* Fernández-Yépez (1953). On a second expedition to the Río Napo in 1983, a new species of *Hoplomyzon* Myers (1942) was collected. These two new species are described herein, and the aspredinid tribe to which they belong, *Hoplomyzontini* Fernández-Yépez, is revised.

*Ernstichthys anduzei*, type species of the genus, was described by Fernández-Yépez (1953) based on a single specimen from the Río Pao Viejo drainage in Estado Cojedes, Venezuela. Orcés (1961) described a superficially very similar species, *Hoplomyzon megistus*, from the Río Bobonaza, an Amazonian headwater tributary in eastern Ecuador and, at the time, apparently was not aware of the genus and species described by Fernández-Yépez. A comparison of these two species reveals that they are distinct and apparently congeneric.

## Methods

Anal-fin-base length includes the membrane connecting the posterior ray to midline of caudal peduncle posteriorly, and caudal-peduncle length is measured from posterior end of anal-fin base to middle of caudal-fin base. Lengths of posterior cleithral (humeral) process, posterior coracoid process, pectoral spine, and first branched pectoral ray are all taken from where the anterior margin of the erect pectoral spine meets the pectoral girdle. Pectoral-spine length does not include the flexible distal extension. Dorsomedian-head length is measured to the posterior tip of the supraoccipital. Interorbital width is measured between the fleshy margins of the orbits. Maxillary-barbel length is measured from its junction with the membrane that forms the lateral margin of the mouth (e.g., just lateral to the base of the rictal barbel in *Ernstichthys anduzei*). Fin-ray counts include all elements. Terminology used herein for various superficial bony plates or scutes in *Hoplomyzontini* is as follows:

Dorsal plates—counted along dorsum between dorsal-fin origin and caudal-fin base, not including plate(s) just anterior to dorsal-fin origin.

Ventral plates—counted along venter between anal-fin origin and caudal-fin base.

Pre-anal-fin plates—those between anus and anal-fin origin; best seen by cutting and parting the skin along the midline and drying the plates

slightly with a stream of air, but often at least partially visible externally.

Lateral-line scutes—counted along lateral line from back of head to caudal-fin base, including 2–4 relatively elongate ossicles between back of head and start of more conspicuous midlateral series of scutes.

Abbreviations for institutions are: California Academy of Sciences, San Francisco, CAS-SU; Field Museum of Natural History, Chicago, FMNH; Natural History Museum of Los Angeles County, Los Angeles, LACM; Museo de Biología de la Escuela Politécnica Nacional, Quito, Ecuador, MEPN; and Florida State Museum, University of Florida, Gainesville, UF.

## *Hoplomyzontini* Fernández-Yépez

Myers (1960) divided *Aspredinidae* into subfamilies *Aspredininae* and *Bunocephalinae*, with the latter divided into tribes *Bunocephalini* and *Hoplomyzontini*. This arrangement is identical to that proposed earlier by Fernández-Yépez (1953), but with the hierarchical level of each taxon one step lower in Myers's version. Fernández-Yépez (1953) should be credited with the family-group name based on *Hoplomyzon* Myers, which he introduced as subfamily "*Hoplomizoninae*." Myers (1960) apparently did not see the 1953 paper by Fernández-Yépez, as he did not include *Ernstichthys* in his review of the family.

The tribe *Hoplomyzontini* is distinguished from other aspredinids by presence of double rows of superficial bony plates on the dorsum from dorsal-fin origin to caudal-fin base, and on the venter from anal-fin origin to caudal-fin base (Fernández-Yépez, 1953; Myers, 1960). Another series of plates, which may be variously fused along the ventral midline, is also present between anus and anal-fin origin. Given that these rows of plates are absent in other aspredinids and all of the relatively generalized or primitive catfishes of the world (including *Diplomystidae*, *Pimelodidae*, *Ictaluridae*, and *Bagridae*), I assume that they are a derived feature providing evidence for the monophyletic status of *Hoplomyzontini*.

*Hoplomyzontini* includes *Hoplomyzon* with two species and two subspecies, *Ernstichthys* with three species, and the monotypic genus *Dupouyichthys* Schultz (1944). I know of three more new species being studied by colleagues, and it seems possible that further explorations, especially in the large rivers, will yield even more new species belonging

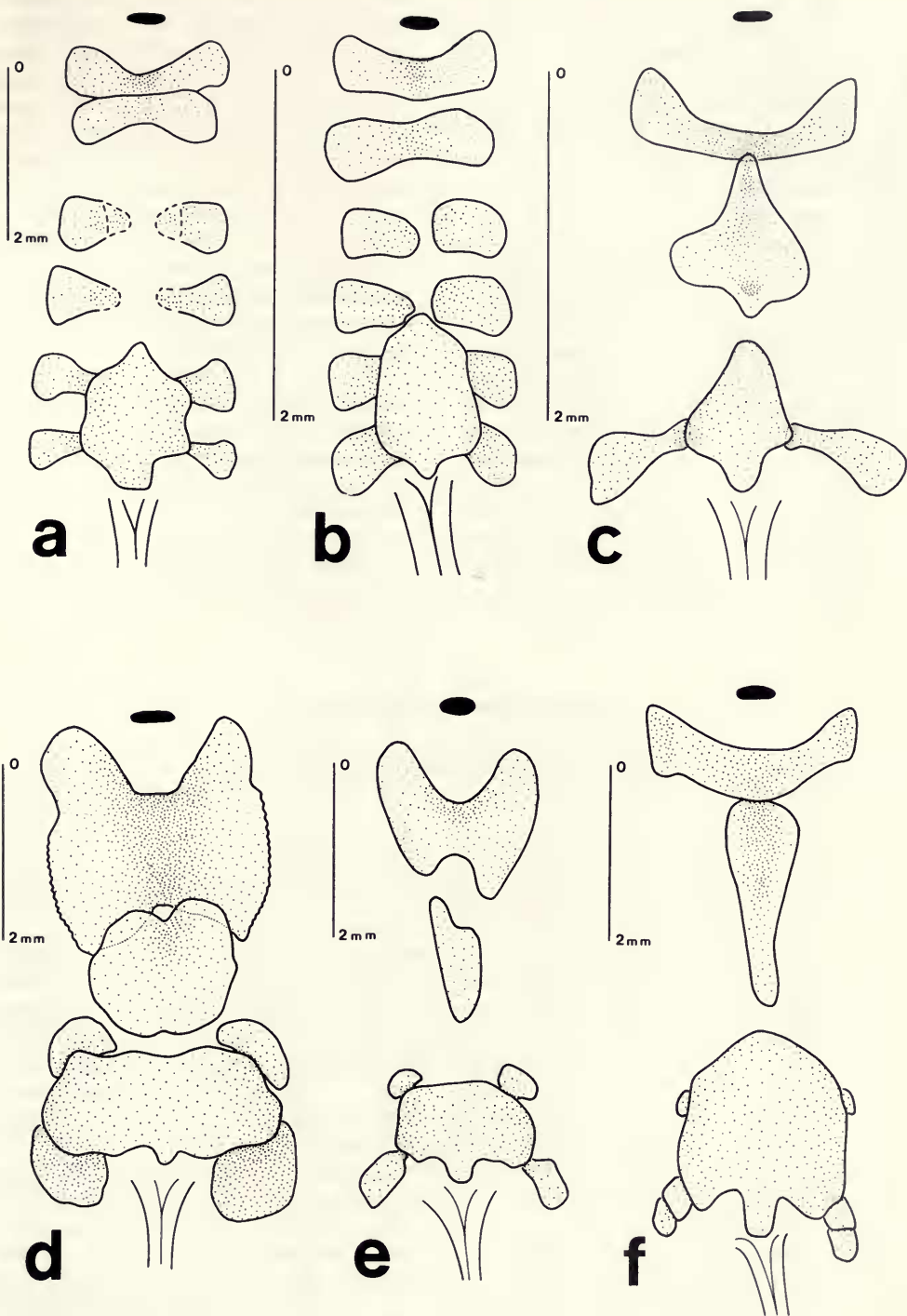


FIG. 1. Pre-anal-fin plates for a, *Hoplomyzon atrizona*, 24.0 mm standard length, paratype, CAS-SU 36495; b, *H. papillatus*, 16.9 mm standard length, holotype, FMNH 94908; c, *Dupouyichthys sapito*, 21.1 mm standard length, FMNH 85938; d, *Ernstichthys anduzei*, 35.3 mm standard length, FMNH 94441; e, *E. megistus*, 36.5 mm standard length, LACM 41741-5; and f, *E. intonsus*, 49.6 mm standard length, holotype, FMNH 94603. The dark oval indicates approximate position of the anus for each species.



to this group. Thus, with the publication of this paper, at least one-third of the tribe will still be undescribed. Most or all members of this tribe are small, fast-water fishes that are extremely difficult to collect (or extremely rare?). The three species of *Ernstichthys*, for example, are known from a total of nine specimens. This paucity of material precludes osteological studies at this time.

The following classification is an attempt to define monophyletic taxa, but given the foregoing limitations, it should be viewed as a beginning framework or a set of hypotheses to be tested when sufficient materials become available. The primary assumptions on which it was based were as follows. Form of the upper-lip papillae in *Hoplomyzon* was assumed to be a derived feature uniquely shared by the two included species. The corresponding primitive condition in aspredinids and all other catfishes is the absence of strictly comparable papillae. Form of the pre-anal-fin plates in *Hoplomyzon* (with four sets of paired elements; fig. 1a,b) was assumed to represent the relatively primitive condition for Hoplomyzontini

because similar paired elements are present farther posterior on the venter and on the dorsum of all species of Hoplomyzontini. Whether pre-anal-fin plates of other armored catfishes (e.g., callichthyids, loricariids) are homologous to those in Hoplomyzontini is unknown. Fusion of the pre-anal-fin plates along the midline was assumed to be a derived feature joining *Dupouyichthys* and *Ernstichthys* as the sister-group of *Hoplomyzon*.

Configuration of the pre-anal-fin plates in *Dupouyichthys* was considered to be an autapomorphic feature defining that monotypic taxon (fig. 1c). Finally, two features were considered to be synapomorphies linking the three species of *Ernstichthys* as the sister-group of *Dupouyichthys*—form of the pre-anal-fin plates (fig. 1d–f) and the relatively long, recurved pectoral spines which are much longer than the first branched pectoral-fin ray. The relatively primitive condition for the pectoral spines of aspredinids and most other catfishes was assumed to be with the spines relatively straighter and not extending noticeably beyond the tip of the first branched pectoral-fin ray.

Key to Genera and Species of Hoplomyzontini Fernández-Yépez

- 1. Upper lip with four or five stout, fleshy papillae; pre-anal-fin plates 11, with four sets of paired elements (fig. 1a,b); pectoral-spine length (excluding the flexible tip) less than 25% standard length. .... *Hoplomyzon* Myers
- 2. Dorsal-fin rays i,6; four stout, fleshy papillae along upper lip and a relatively long, slender rectal barbel on each side of the mouth (fig. 2a); two pairs of mental barbels; maxillary barbel extending posteriorly beyond pectoral-fin origin and attaching broadly to side of head by membrane (fig. 2a); snout broadly rounded and only slightly emarginate at midline. .... *Hoplomyzon atrizona* Myers (with two subspecies differing in pigmentation; Schultz, 1944)
- 2. Dorsal-fin rays i,3,i; five fleshy papillae along the upper lip and no rectal barbel (fig. 2b); two pairs of moderately long barbels and about 36 short, papillae-like barbels on mentum; maxillary barbel not extending posteriorly as far as pectoral-fin origin and only proximal part attached to side of head by membrane (fig. 2b); snout appearing bilobed, deeply emarginate at midline. .... *Hoplomyzon papillatus*, new species
- 1. Upper lip without stout, fleshy papillae; pre-anal-fin plates 5–9, with 1–3 sets of paired elements (fig. 1c–f); pectoral-spine length greater than 25% standard length.
- 3. Pectoral-fin spine with 5–6 serrations on posterior margin, not strongly recurved and only slightly longer than first branched pectoral-fin ray; lateral-line scutes 33–39; pre-anal-fin plates five, with one set of paired elements (fig. 1c). .... *Dupouyichthys sapito* Schultz
- 3. Pectoral-fin spine with 10–18 serrations on posterior margin, strongly recurved and noticeably longer than first branched pectoral-fin ray; lateral-line scutes 42–64; pre-anal-fin plates 7–9, with 2–3 sets of paired elements (fig. 1d–f). .... *Ernstichthys* Fernández-Yépez
- 4. Dorsal fin i,7; anal fin vii,4; maxillary barbel with about 15 threadlike secondary barbels; more than 100 short, slender mental and postmental barbels (fig. 3); pectoral spine with 16 sharp, antrorse serrations on anterior margin and 18 retrorse serrations on posterior margin .... *Ernstichthys intonsus*, new species
- 4. Dorsal fin i,4–5; anal fin ii,5; maxillary barbel simple, unbranched; only two pairs of relatively

stout mental barbels and no postmental barbels; pectoral spine with anterior margin entire and about 10–14 retrorse serrations on posterior margin.

5. Short, stout rictal barbel present near anterolateral corner of mouth (fig. 2c); snout distinctly convex in lateral profile; width between pectoral-fin insertions 28.0%–28.6% standard length. . . . . *Ernstichthys anduzei* Fernández-Yépez
5. Rictal barbel absent (or, at most, represented by a low bump; fig. 2d); snout relatively straight in lateral profile; width between pectoral-fin insertions 24.7%–26.3% standard length. . . . . *Ernstichthys megistus* (Orcés)

**Hoplomyzon Myers**

*Hoplomyzon* Myers, 1942: 94–95; *Hoplomyzon atrizona* Myers, 1942, type species by original designation.

DIAGNOSIS—Distinguished from all known aspredinids by having four or five stout, fleshy papillae on upper lip. Differs further from other gen-

era of *Hoplomyzontini* in having pre-anal-fin plates 11, with four sets of paired elements (fig. 1a,b), pectoral-spine length (excluding flexible tip) less than 25% standard length, and relatively short posterior cleithral and coracoid processes; resembles *Dupouyichthys*, but differs from *Ernstichthys* in having relatively deeper caudal peduncle, greater width between anterior nostrils, and wider interorbital (table 1).

TABLE 1. Mensural characteristics of the six species of *Hoplomyzontini* expressed in thousandths of standard length.

Character	Hoplomyzon			Ernstichthys				
	atrizona Paratype CAS-SU 36495	papil- latus Holo- type FMNH 94908	Dupouy- ichthys sapito FMNH 85938	anduzei		megistus		intonsus Holo- type FMNH 94603
						FMNH 94441	UF 35393	
				36495	94908	85938	94441	35393
Standard length, mm	24.0	16.9	21.1	35.3	32.8	66.8	36.5	49.6
Body depth	142	136	166	141	143	130	132	101
Predorsal length	400	408	455	439	439	463	433	401
Dorsal-fin height	179	147	183	140	137	144	175	200
Caudal-peduncle length	250	254	242	249	259	232	241	210
Caudal-peduncle depth	42	47	46	32	30	25	30	27
Caudal-fin length	...	207	218	201	195	180	200	213
Preanal length	529	527	536	541	549	545	548	490
Anal-fin-base length	225	224	220	204	195	199	200	306
Anal-fin height	200	154	194	195	207	172	208	164
Prepelvic length	300	325	374	367	348	361	340	337
Pelvic-fin length	221	183	204	235	213	259	216	196
Pelvic-fin interspace	83	83	99	92	93	115	85	87
Pectoral-spine length	212	189	282	363	366	332	411	387
Anterior branched pectoral ray	246	195	249	252	259	226	255	250
Posterior-cleithral-process length	125	101	156	163	159	144	164	149
Posterior-coracoid-process length	108	89	156	178	168	154	162	131
Dorsomedian-head length	263	272	299	314	302	307	293	264
Width between pectoral insertions	296	237	322	286	280	247	263	272
Head depth at occiput	138	136	171	143	137	156	132	93
Snout length	108	107	123	127	128	138	126	101
Eye diameter	25	12	33	23	21	18	18	10
Interorbital width	75	95	76	57	58	45	55	63
Width between anterior nostrils	67	83	66	51	46	49	47	52
Mouth width	79	83	103	83	76	97	82	73
Barbel lengths:								
Maxillary	195	130	152	184	171	186	151	377
Lateral mental	92	71	81	115	104	183	85	[44–65]
Medial mental	50	41	47	48	40	75	38	

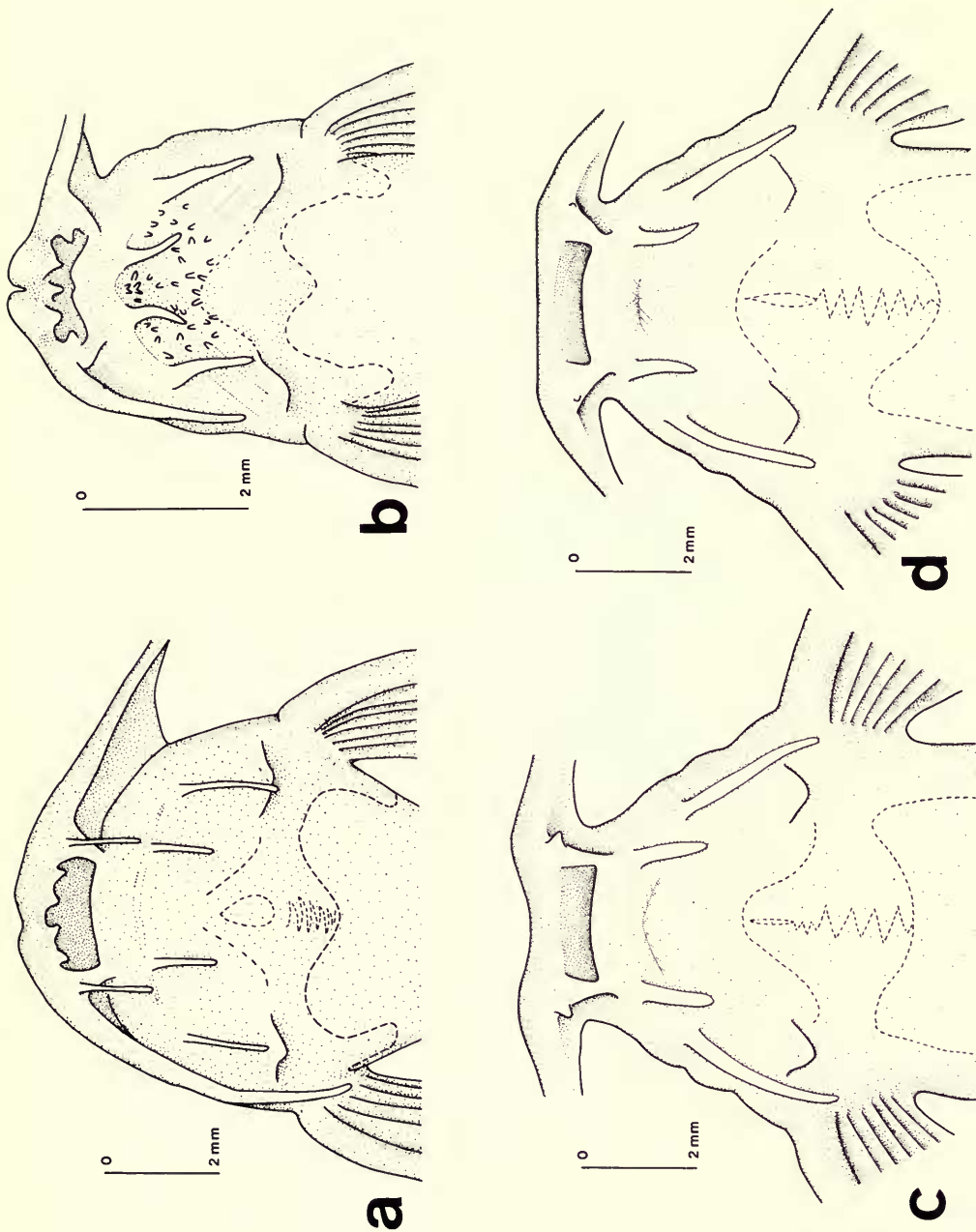


FIG. 2. Ventral view of head showing mouth and barbels for **a**, *Hoplosternon littorale*, 24.0 mm standard length, paratype, CAS-SU 36495; **b**, *H. papillatus*, 16.9 mm standard length, holotype, FMNH 94908; **c**, *Epiplatys spilargenteus*, 35.3 mm standard length, FMNH 94441; and **d**, *E. megistos*, 36.5 mm standard length, LACM 41741-5.



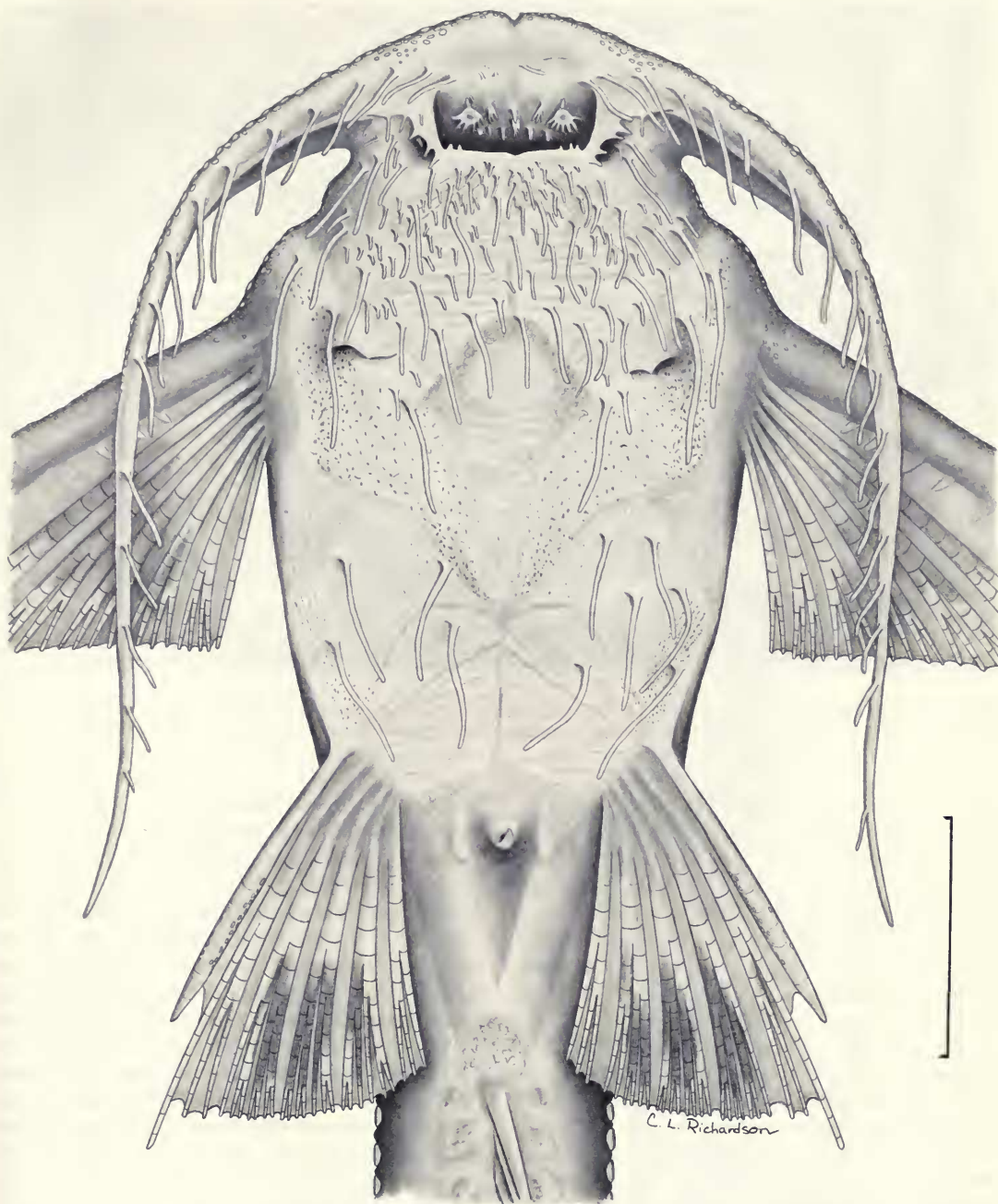


FIG. 3. Ventral view of head, breast, and belly showing mouth and barbels for *Ernstichthys intonsus*, 49.6 mm standard length, holotype, FMNH 94603. Scale bar is 5 mm. (Drawn by Clara Richardson.)

**Hoplomyzon atrizona** Myers. Figures 1a, 2a, 4a

*Hoplomyzon atrizona* Myers, 1942: 95–96, fig. 3.

PARATOPOTYPE—CAS-SU 36495, 24.0 mm standard length, Venezuela, Estado Táchira, small

tributary to Río Zulia, at Estación Táchira, 60 km north of San Cristóbal, altitude about 150 m, Lago de Maracaibo basin, F. F. Bond, 14 June 1938.

DIAGNOSIS—Distinguished from all known aspredinids by having four stout papillae along up-

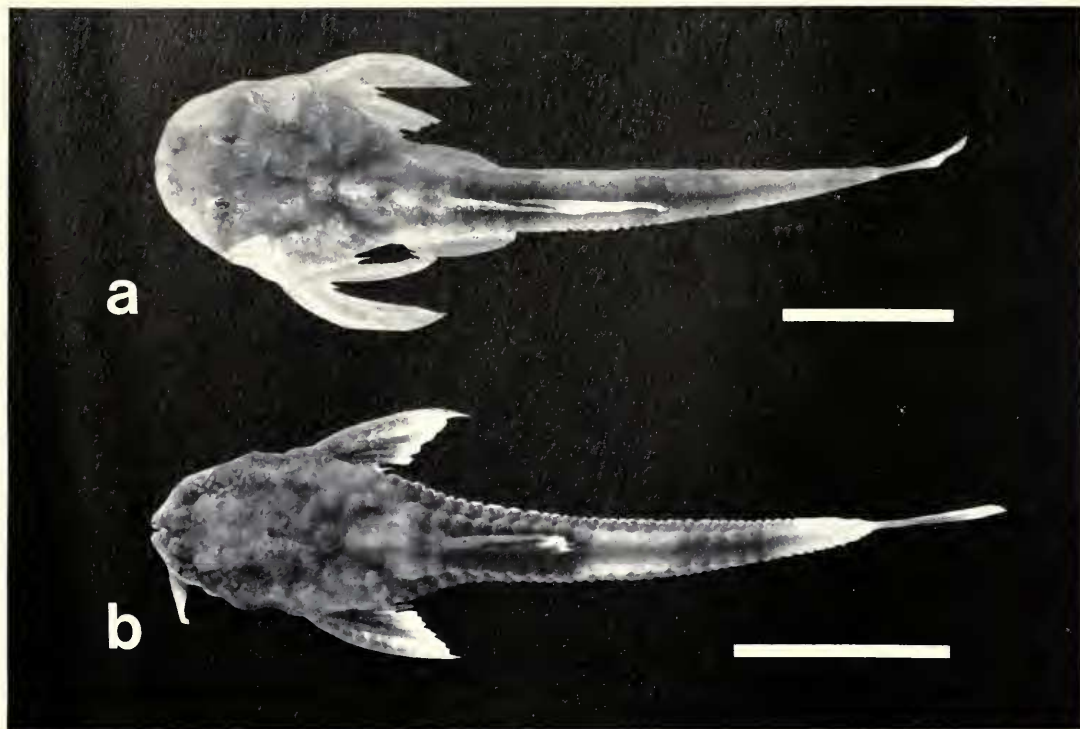


FIG. 4. Dorsal views of **a**, *Hoplomyzon atrizona*, 24.0 mm standard length, paratype, CAS-SU 36495; and **b**, *H. papillatus*, 16.9 mm standard length, holotype, FMNH 94908. Scale bars are 5 mm.

per lip, and from all species of *Bunocephalinae* by its relatively long, slender rictal barbel (fig. 2a) and dorsal-fin rays i,6. Differs further from its only congener in having (1) only two pairs of mental barbels; (2) maxillary barbel extending posteriorly beyond pectoral-fin origin and attaching broadly to side of head by membrane; (3) snout broadly rounded, not strongly emarginate at midline; (4) lateral-line scutes in relatively straight line; (5) pelvic fin relatively rounded posteriorly, third ray longest and not extended posteriorly as filament; and (6) dorsal and anal fins not attached posteriorly to body midline by membranes.

**DESCRIPTION**—Mensural characters are presented in Table 1. Meristic data follow: dorsal fin i,6; anal fin ii,4; pectoral fin I,4–5,i with posterior ray simple; pectoral spine with anterior margin entire and six serrations on posterior margin, serrations absent on proximal fourth of spine; pelvic fin i,5 or i,4,i with last ray branched on one fin and simple on other, and posterior margin of fin rounded with third ray longest; caudal fin i,7,i; dorsal plates 20; ventral plates 14; pre-anal-fin plates as in Figure 1a; lateral-line scutes 47, including three elongate ossicles anteriorly.

**DISTRIBUTION**—Known only from the Lago de Maracaibo basin in western Venezuela.

**COMMENTS**—Schultz (1944, pp. 248–249, plate 4C, fig. 4a) described a new subspecies, *H. atrizona petroleus*, from the Río Motatán, another tributary of Lago de Maracaibo. Schultz distinguished his new subspecies on the basis of what seem to be minor differences in pigmentation. I have not examined the holotypes of these two nominal subspecies, so will defer judgment on the validity of *petroleus*. Schultz, however, had only two specimens from a single locality. It seems possible that larger samples will reveal variation in pigmentation encompassing that of these two nominal subspecies.

***Hoplomyzon papillatus***, new species. Figures 1b, 2b, 4b, 5

**HOLOTYPE**—FMNH 94908, 16.9 mm standard length, Ecuador, Napo Province, Río Aguarico, about 1 km upstream from confluence with Río Shushufindi, lat. 0°17'S, long. 76°25.4'W, bottom sandy, strong current just offshore with large eddies along beach, water level rose 1–2 m in pre-



ceding few hours and still rising rapidly at time of collection, seining at night to depth of 1.5 m, field no. DJS83-91, D. Stewart, M. Ibarra, and R. Bar-riga, 24 November 1983.

**DIAGNOSIS**—Distinguished from all known as-predinids by having five stout papillae along upper lip and mentum with two pairs of longer barbels and about 36 short, papillae-like barbels (fig. 2b). Distinguished from all other species of Hoplo-myzontini by having snout deeply emarginate at midline, appearing bilobed. Differs further from its only congener in having (1) no slender rictal barbel; (2) dorsal-fin rays i,3,i (vs. i,6); (3) maxillary barbel relatively short, not extending posterior to pectoral-fin origin (13% vs. 19.5% standard length, extending posteriorly beyond pectoral-fin origin); (4) lateral-line scutes in zig-zag pattern (vs. relatively straight line); (5) second pelvic-fin ray long-est, extending posteriorly as short filament (vs. third ray longest and not extended); and (6) dorsal and anal fins attached posteriorly to body midline by membranes (vs. not attached).

**DESCRIPTION**—Mensural characters are pre-sented in Table 1 for comparison with other species of Hoplomyzontini. Anterior nostril on short tube situated just behind anterior margin of snout and directed anteriorly. Posterior nostril closer to eye than to anterior nostril, with lunate opening about equal in size to eye diameter. Delicate, conical teeth present in narrow row near distal end of mandible and on premaxilla in small patch asso-ciated with lateral groove of upper lip (i.e., dorsal to the two lateralmost upper-lip papillae).

**Meristic Data for Holotype**—Dorsal fin i,3,i with posterior margin relatively straight; dorsal-fin base (including membrane attaching posterior ray to body midline) extends posteriorly to anterior mar-gin of ninth dorsal plate, and depressed first dorsal ray to anterior margin of seventh plate; anal fin ii,4 with first or second branched ray longest and posterior margin relatively straight; anal-fin base extends posteriorly to anterior margin of ninth ventral plate; pectoral fin I,2,iv on one side and I,3,iii on other side; pectoral spine with anterior margin entire and posterior margin with seven re-trorse serrations; flexible extension of pectoral-fin spine equals 40% length of spine and reaches pos-teriorly to point ventral to third branched dorsal-fin ray; pelvic-fin origin ventral to posterior tip of supraoccipital; pelvic fin v or vi, no branched rays and second ray longest, extending posteriorly as flexible filament about 30% longer than next long-est pelvic ray, extending to second plate anterior to anal-fin origin; first pelvic-fin ray ventral to

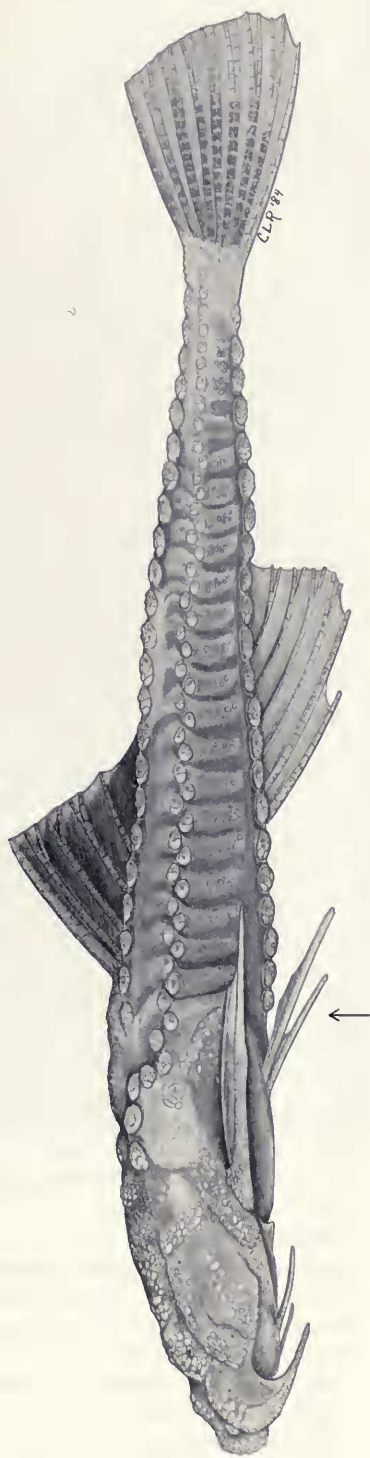


FIG. 5. Lateral view of *Hoplomyzon papillatus*, 16.9 mm standard length, holotype, FMNH 94908. Scale bar is 5 mm and arrow indicates position of anus. (Drawn by Clara Richardson.)

second ray at base and joined to second only along proximal fourth of length; caudal fin i,7,i, obliquely truncate but rounded ventrally, with two ventralmost branched rays about equal in length and longer than other caudal-fin rays; dorsal plates 23; ventral plates 17; pre-anal-fin plates as in Figure 1b; lateral-line scutes 51, including four ossicles anteriorly; lateral body armature formed by alternating dorsal and ventral plates; rounded lateral-line scutes associated with each plate form a zig-zag pattern (fig. 5) which contrasts noticeably with relatively straight series of lateral-line scutes in *H. atrizona*.

**PIGMENTATION**—General color of most of head, body, and fins dark olive brown to dark gray; following parts contrast with this darker background color in being beige or sandy-colored: anterior margin of snout, maxillary and mental barbels, interorbital/frontal region of head, posteriorly convex band extending across nape and anterior back from one posterior cleithral process to other, spot on dorsum and upper flank covering dorsal plates 9–12, spot on four posteriormost dorsal plates and extending posteroventrally to form band covering caudal-fin base, pelvic fins, most of anal fin, and distal margins of pectoral and caudal fins; lips and associated papillae relatively unpigmented.

**COMMENTS**—Among species of *Hoplomyzon*-tini, only *Ernstichthys intonsus* described below has more than two pairs of mental barbels. *Hoplomyzon papillatus* differs noticeably from *E. intonsus*, however, in having what appear to be two classes of mental barbels—two pairs of longer barbels apparently homologous with those in all other *Bunocephalinae* and numerous shorter barbels. In *E. intonsus*, all mental barbels are slender, and none can be clearly identified as homologous to the two pairs seen in other *bunocephalins*. All mental barbels of *H. papillatus* are covered with small tubercles like those on mental barbels of all other *bunocephalins*, except *E. intonsus* (see comments under that species account below) which differs in having naked mental barbels.

*Hoplomyzon papillatus* appears to differ further from its only congener in various morphometric and meristic characters, but without enough specimens to evaluate variation, I hesitate to include them in the diagnosis. For example, *papillatus* seems to have relatively shorter anterior branched pectoral-fin ray, narrower width between pectoral-fin insertions, wider interorbital and distance between anterior nostrils, and shorter mental barbels (table 1). This is also the only species of *Hoplo-*

myzontini for which jaw teeth could be observed with a dissecting microscope. Teeth are either absent in the other species or too delicate to be seen, even when the jaws were dried slightly with an airstream.

**ETYMOLOGY**—From the Latin *papillatus*, with buds, in reference to the numerous short, papillae-like mental barbels.

### Dupouyichthys Schultz

*Dupouyichthys* Schultz, 1944: 244–245; *Dupouyichthys sapito* Schultz, 1944, type species by original designation.

**DIAGNOSIS**—Distinguished from all known apredinids by its unique configuration of five pre-anal-fin plates with only one set of paired elements (fig. 1c). Differs further from other *Hoplomyzon*-tini by its relatively deeper body and low number of lateral-line scutes (33–39). Differs further from *Hoplomyzon* by (1) absence of upper-lip papillae, (2) relatively longer posterior coracoid and cleithral processes, and (3) longer pectoral spine. Differs further from *Ernstichthys* in its (1) relatively shorter pectoral spine, only slightly longer than first branched pectoral-fin ray and with 5–6 serrations on posterior margin; (2) relatively larger eye; and (3) wider interorbital (table 1).

**COMMENTS**—Myers (1960) considered *Dupouyichthys* to be a synonym of *Hoplomyzon*. Based on configuration of the pre-anal-fin plates (fused along midline) and absence of stout upper-lip papillae, *Dupouyichthys* appears to be more closely related to *Ernstichthys* than to *Hoplomyzon*. I have therefore chosen to remove *Dupouyichthys* from the synonymy of *Hoplomyzon* and recognize it as a distinct genus until the interrelationships of these fishes are better known.

### Dupouyichthys sapito Schultz. Figures 1c, 6a

*Dupouyichthys sapito* Schultz, 1944: 245–246, plate 4D, fig. 4b.

**NONTYPE**—FMNH 85938, 21.1 mm standard length, Venezuela, Estado Zulia, Río Guasare at El Paso, flat gravel bar, field no. VE75-29, D. Hicks and party, 26 August 1975.

**DIAGNOSIS**—Distinctive features of the only known species of *Dupouyichthys* are given in the generic diagnosis above.

**DESCRIPTION**—Mensural characters are pre-

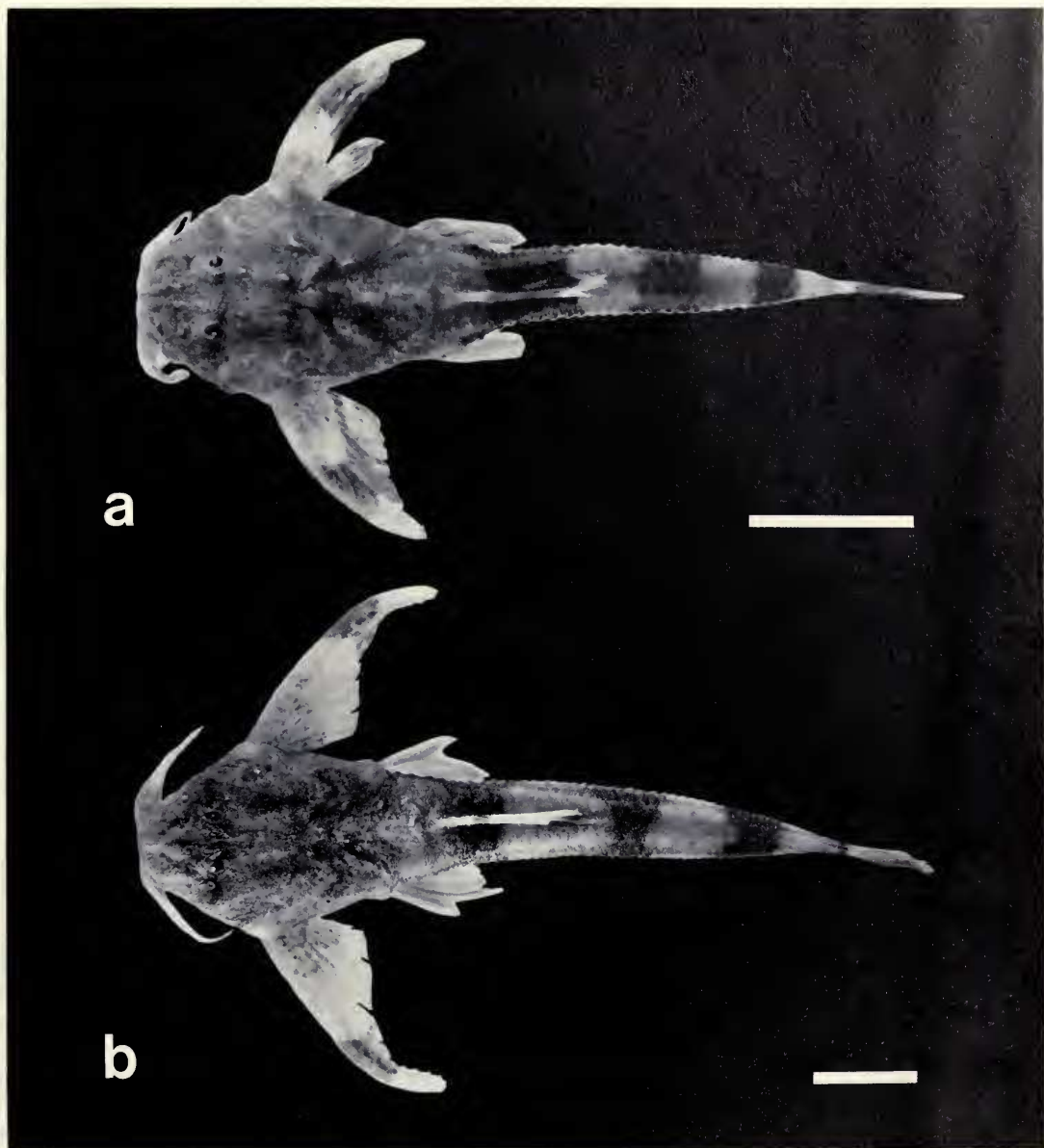


FIG. 6. Dorsal views of **a**, *Dupouyichthys sapito*, 21.1 mm standard length, FMNH 85938; and **b**, *Ernstichthys anduzei*, 32.8 mm standard length, UF 35393. Scale bars are 5 mm.

sented in Table 1. Meristic data follow (with range of values reported by Schultz, 1944, for the holotype and seven paratypes given in parentheses): dorsal fin i,4 (i,4–5); anal fin ii,4 (ii,5–6); pectoral fin I,5,i (I,6) with posterior ray simple; pectoral spine with anterior margin entire and 5 (5–6) serrations on posterior margin, serrations absent on proximal 40% of spine; pelvic fin i,4,i (i,5) with first branched ray longest and outer branch of that

ray extending posteriorly as short filament, sixth pelvic-fin ray simple; caudal fin i,7,i (i,7–8,i) with ventralmost branched ray longest; dorsal plates 21 (20–23); ventral plates 16 (17–18); pre-anal-fin plates as in Figure 1c; lateral-line scutes 34 (33–39), including three elongate ossicles anteriorly; two pairs of mental barbels and no rictal barbel (similar to *E. megistus*, fig. 2d).

**DISTRIBUTION**—The type locality is in the Río



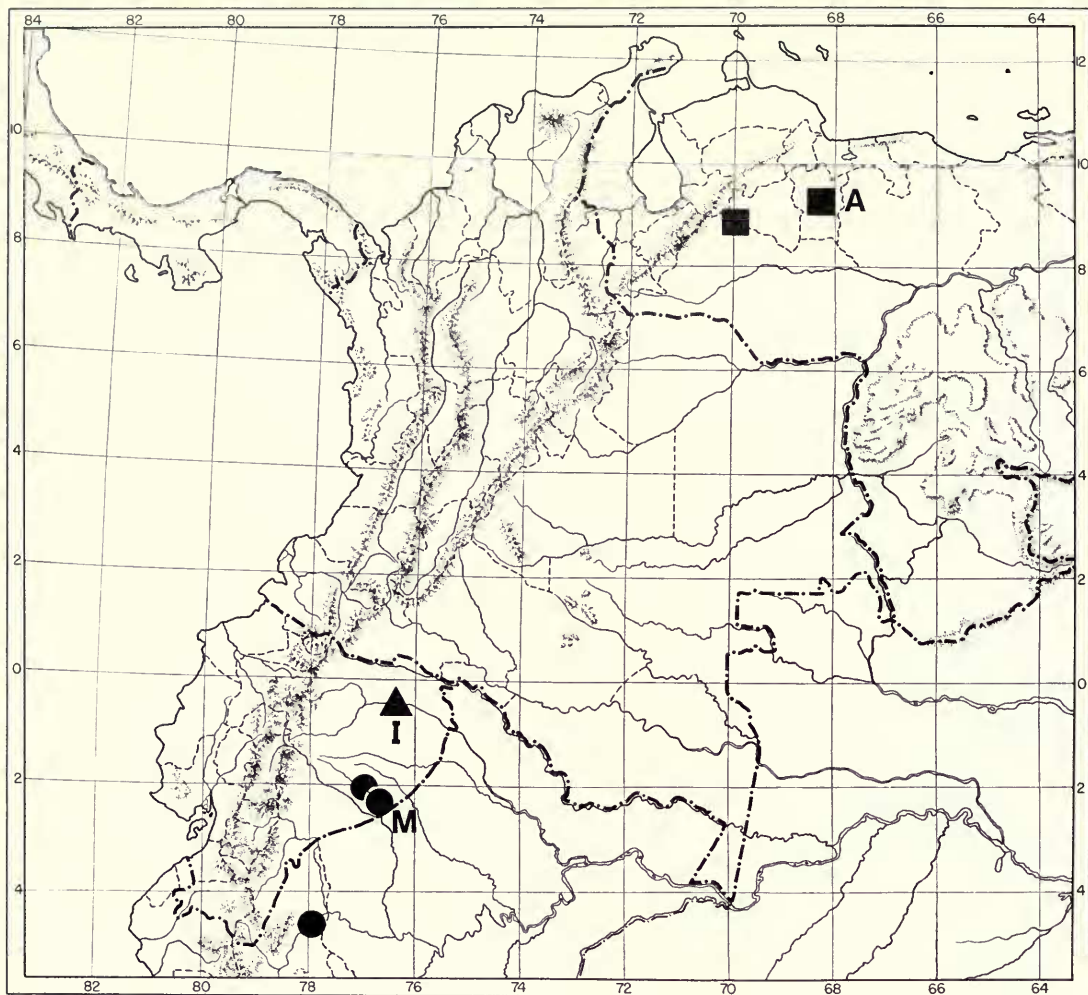


FIG. 7. Localities for the three species of *Ernstichthys*, with type localities marked with letters as follows: A, ■ (*anduzei*); M, ● (*megistus*); and I, ▲ (*intonsus*).

Motatán, a tributary entering the east side of Lago de Maracaibo, Venezuela (Schultz, 1944). The specimen reported herein and four of Schultz's paratypes come from tributaries to the west side of Lago de Maracaibo, and elsewhere, *D. sapito* is known from the Río Librija in the Río Magdalena basin, Colombia (Miles, 1945).

#### *Ernstichthys* Fernández-Yépez

*Ernstichthys* Fernández-Yépez, 1953: 4–5; *Ernstichthys anduzei* Fernández-Yépez, 1953, type species by original designation.

**DIAGNOSIS**—Distinguished from all other known aspredinids by pre-anal-fin plates 7–9, with 2–3

sets of paired elements (fig. 1d–f), and pectoral-fin spine with 10–18 serrations on posterior margin, strongly recurved and noticeably longer than first branched pectoral-fin ray. Differs further from other genera of Hoplomyzontini in having relatively shallower caudal peduncle, narrower width between anterior nostrils, and narrower interorbital (table 1). Differs further from *Hoplomyzon* in having no stout papillae along upper lip and relatively longer posterior cleithral and coracoid processes. Differs from *Dupouyichthys* in having more than 40 lateral-line scutes.

***Ernstichthys anduzei* Fernández-Yépez.** Figures 1d, 2c, 6b

*Ernstichthys anduzei* Fernández-Yépez, 1953: 5–6, fig. 1.

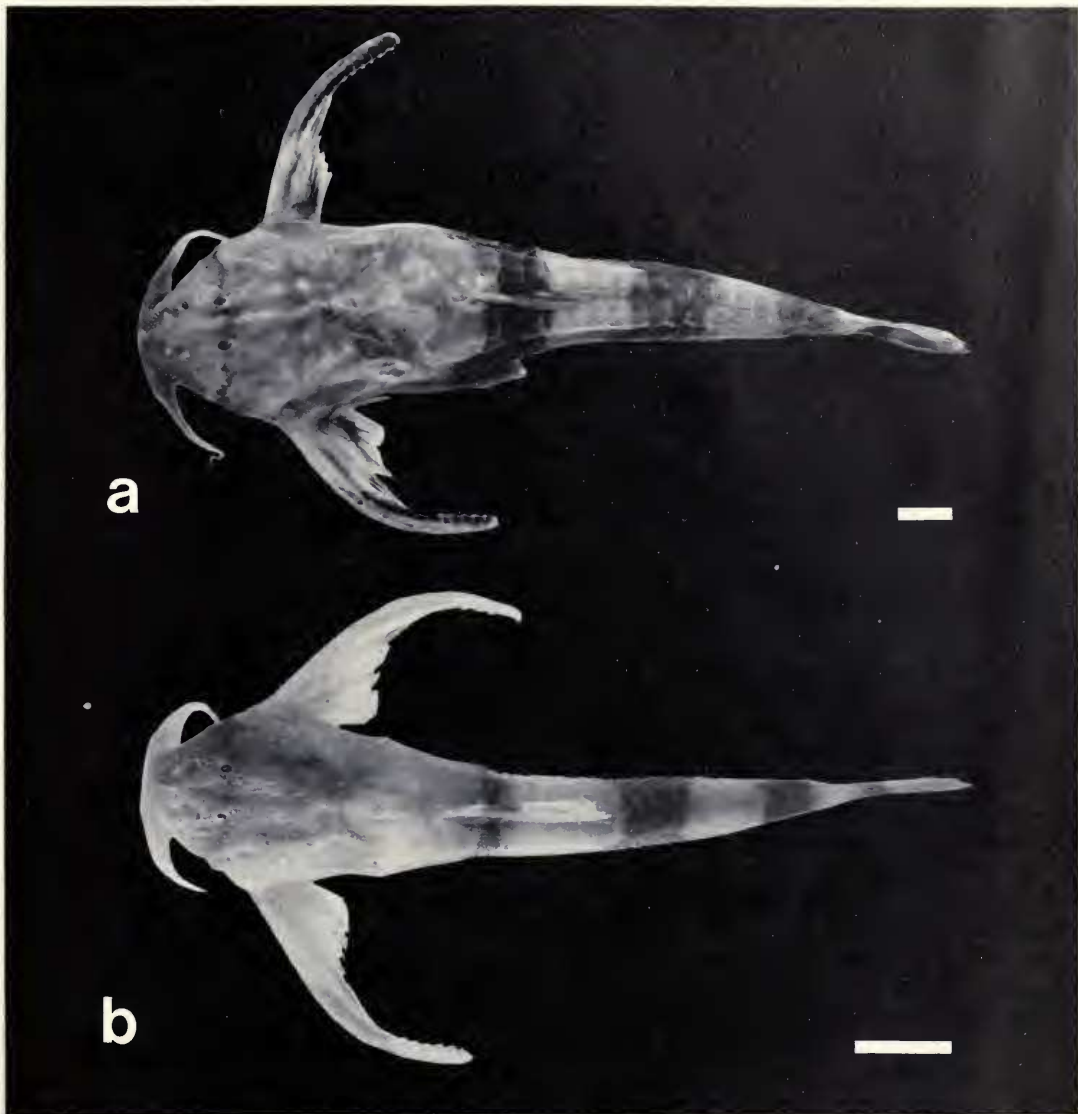


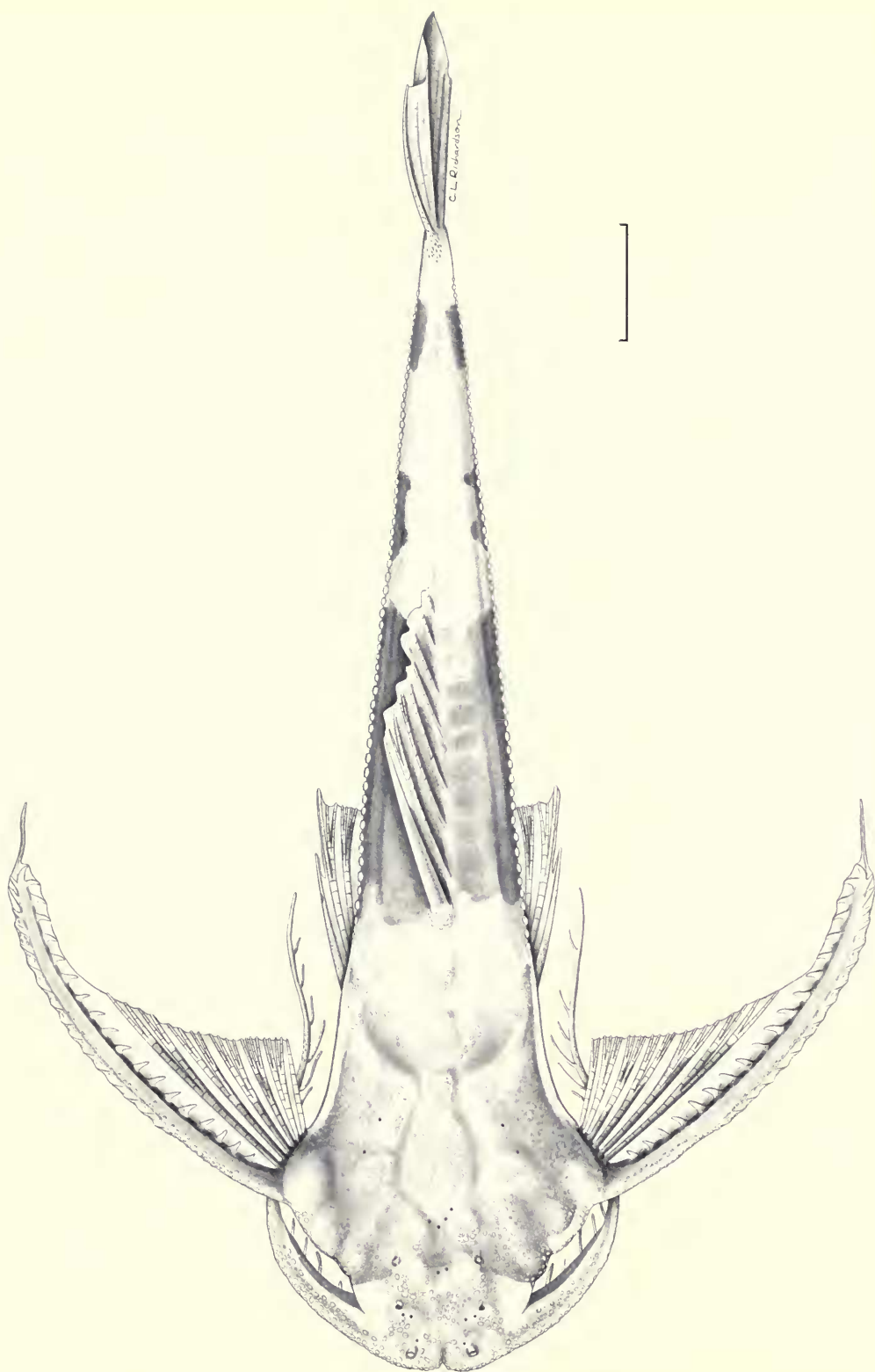
FIG. 8. Dorsal views of *Ernstichthys megistus*: a, 66.8 mm standard length, holotype, MEPN 4305; and b, 36.5 mm standard length, LACM 41741-5. Scale bars are 5 mm.

**NONTYPES**—FMNH 94441, 35.3 mm standard length, Venezuela, Estado Barinas, Río Bocono at La Veguita, lat. 8°49'N, long. 70°0'W, beach seine, water 22.5° C, turbid, depth to 1 m, bottom sand and mud, current very strong (over 1.5 m/s), field no. DCT80-82, D. Taphorn, C. Lilystrom, and S. Reid, 21 July 1980; UF 35393, 32.8 mm standard length, same locality.

**DIAGNOSIS**—Distinguished from its two congeners by having short, stout rictal barbel (fig. 2c). Differs further from *E. megistus* in having snout distinctly convex in lateral profile and relatively

greater width between pectoral-fin insertions (table 1). Distinguished from *E. intonsus* by its lower dorsal- and anal-fin-ray counts, unbranched maxillary barbels, and pectoral spine with only 10–14 serrations on posterior margin (also, see diagnosis of *E. intonsus* for other contrasting characters).

**DESCRIPTION**—Mensural characters are presented in Table 1. Meristic data follow (range given only where the two specimens differ): dorsal fin i,4 (i,5 in holotype; Fernández-Yépez, 1953); anal fin ii,5; pectoral fin I,5,i with posterior ray simple; pectoral spine with anterior margin entire and 10–





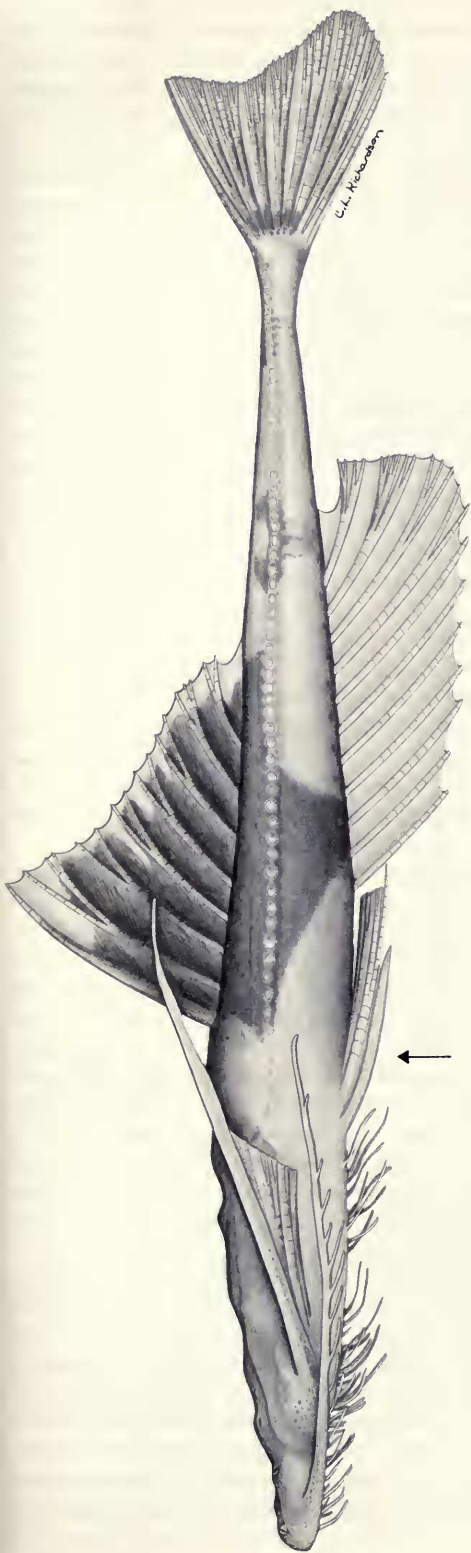


FIG. 9. Dorsal and lateral views of *Ernstichthys intonsus*, 49.6 mm standard length, holotype, FMNH 94603. Scale bar is 5 mm. (Drawn by Clara Richardson.)

14 serrations on posterior margin, serrations absent or rudimentary on proximal third of spine; pelvic fin i,4,i with first branched ray longest and outer branch of that ray extending posteriorly as short filament, sixth pelvic-fin ray simple; caudal fin i,7,i with ventralmost branched ray longest; dorsal plates 21–22; ventral plates 15–16; pre-anal-fin plates as in Figure 1d; lateral-line scutes about 43–44, including two elongate ossicles anteriorly.

**DISTRIBUTION**—This species is known only from the Río Orinoco basin in western Venezuela (fig. 7).

**COMMENTS**—The holotype of this species, originally in the Museo de Historia Natural La Salle, Caracas, Venezuela (Cat. No. 7779), is now in the fish collection at the Museo de Biología, Universidad Central de Venezuela, Caracas (F. Mago-Leccia, personal communication).

The rounded second median pre-anal-fin plate of *E. anduzei* (fig. 1d) differs markedly from its more slender homologue in the other two species of *Ernstichthys* (fig. 1e,f). This feature was omitted from the diagnosis, however, because two specimens of *E. anduzei* examined by D. Taphorn (Guanare, Venezuela, letter of 27 March 1984) apparently showed variation in shape of this plate, with one individual having a slender element more like those in Figure 1e,f. The second specimen from the Río Bocono (UF 35393) also has a slender second plate, while Fernández-Yépez's (1953) illustration of the holotype shows a rounded element. This variation could be due to sexual dimorphism. Examination of the gonads in one specimen of each form did not reveal obvious differences, but perhaps inactive females have gonads superficially similar to those of males. Other species of *Hoplomyzontini* could have similar dimorphisms and should be checked when adequate samples become available.

***Ernstichthys megistus* (Orcés).** Figures 1e, 2d, 8a,b

*Hoplomyzon megistus* Orcés, 1961: 3–6, figs. 1 and 2.

**HOLOTYPE**—MEPN 4305, 66.8 mm standard length, Ecuador, lower Río Bobonaza at Chichero, about 25 km upstream from mouth in Río Pastaza, approx. lat 2°23'S, long. 76°39'W, P. Mena, November 1959.

**NONTYPE**—LACM 41741-5, 36.5 mm standard length, Perú, Departamento Amazonas, Río Marañón across from Santa Maria de Nieva and confluence with Río Nieva, lat. 4°35'S, long. 77°52'W,

beach seine, water turbid and rising rapidly due to heavy rains, depth to 1.5 m, bottom sandy with some rock cobble and logs, current strong, field no. DJS80-44, D. Stewart and D. Stamm, 16 April 1980.

**DIAGNOSIS**—Distinguished from *E. anduzei* by absence of rictal barbel (or, at most, low bump present; fig. 2d), snout relatively straight in lateral profile, and relatively narrower width between pectoral-fin insertions (table 1). Distinguished from *E. intonsus* by its lower dorsal- and anal-fin-ray counts, unbranched maxillary barbel, only two pairs of stout mental barbels, and pectoral spine with only 13–14 serrations on posterior margin (also, see diagnosis of *E. intonsus* for other contrasting characters).

**DESCRIPTION**—Mensural characters are presented in Table 1. Meristic data follow (range given only when the two specimens differ): dorsal fin i,4; anal fin ii,5; pectoral fin I,5,i with posterior ray simple; pectoral spine with anterior margin entire and 13–14 serrations on posterior margin, serrations absent or rudimentary on proximal fourth of spine; pelvic fin i,4,i with first branched ray longest and outer branch of that ray extending posteriorly as short filament, sixth pelvic-fin ray simple; caudal fin i,7,i with ventralmost branched ray slightly longer than ray just dorsal to it; dorsal plates 19–20; ventral plates 13–15; pre-anal-fin plates as in Figure 1e; lateral-line scutes about 42–44, including three elongate ossicles anteriorly.

**DISTRIBUTION**—The types for this species both come from the lower Río Bobonaza in eastern Ecuador (fig. 7). The recently collected specimen from the Río Marañón, Perú, extends the range southward.

**COMMENTS**—The paratype and only other known specimen of this species was originally deposited in a small collection at Universidad Central del Ecuador, Quito (Cat. No. 270); it could not be located and is presumably lost. The specimen from Perú differs noticeably from the holotype in having relatively shorter barbels and higher median fins (table 1). The holotype is almost twice as large as the Peruvian specimen, so observed differences could be due to allometric changes or, perhaps, sexual dimorphism.

***Ernstichthys intonsus***, new species. Figures 1f, 3, 9

**HOLOTYPE**—FMNH 94603, 49.6 mm standard length, Ecuador, Napo Province, Río Napo at Añangu (fig. 7), lat. 0°30.8'S, long. 76°24.0'W, trawl

sample in mid-river, altitude just under 200 m, water about 28° C (measured five days earlier and farther upstream), turbid, depth 3–4 m, bottom sandy with some leaf litter and logs, strong current, field no. DJS81-51, D. Stewart, M. Ibarra, and R. Barriga, 12 October 1981.

**DIAGNOSIS**—Distinguished from all known aspredinids by (1) extremely elaborate development of short, slender barbels as follows (fig. 3): maxillary barbel branched with about 15 threadlike, secondary barbels; more than 100 such barbels on mentum, breast, and belly, with posteriormost barbel near pelvic-fin origin (but absent on skin covering pectoral girdle ventrally); similar short barbels surrounding mouth and on roof and floor of buccal cavity; each premaxilla with small rosette of papillae on fleshy pedicel; (2) anterolateral branch of pelvic bone expanded to form superficial plate (having rugose texture like posterior coracoid process and covered with thin, loose skin), extending forward to meet relatively short coracoid process about halfway between pelvic-fin origin and posterior end of pectoral-fin base (fig. 10b); and (3) dorsal fin with unbranched, flexible first ray and seven branched rays (vs. dorsal fin i,1–6 in all other aspredinids). Distinguished from all aspredinids, except species of *Aspredinichthys* Bleeker, in having integumentary tubercles virtually absent from mentum, belly, and associated barbels, giving smooth texture to skin.

Further distinguished from other species of tribe Hoplomyzontini by its high number of anal-fin rays (vii,4 vs. anal fin iii,4 or ii,5–6), serrations on posterior margin of pectoral spine (about 18 vs. 14 or less), serrations on anterior margin of pectoral spine (about 16 vs. none), and midlateral scutes (about 64 vs. 51 or less). Numerous mensural characters appear to distinguish this taxon from its two congeners (table 1); for example, *E. intonsus* has very long maxillary barbel, greatly depressed head and body, and relatively small eye (some of these apparent mensural differences may show overlap when more specimens are examined).

**DESCRIPTION**—Mensural characters are presented in Table 1 for comparison with other species of Hoplomyzontini. Relative lengths and positions of fins and barbels of holotype are depicted in Figures 3 and 9. Coloration of preserved specimens varies from dark gray on dorsal fin and mid-body to dirty white on mentum and belly; pigmentation pattern is illustrated in Figures 3 and 9. Teeth apparently absent on premaxilla and mandible.

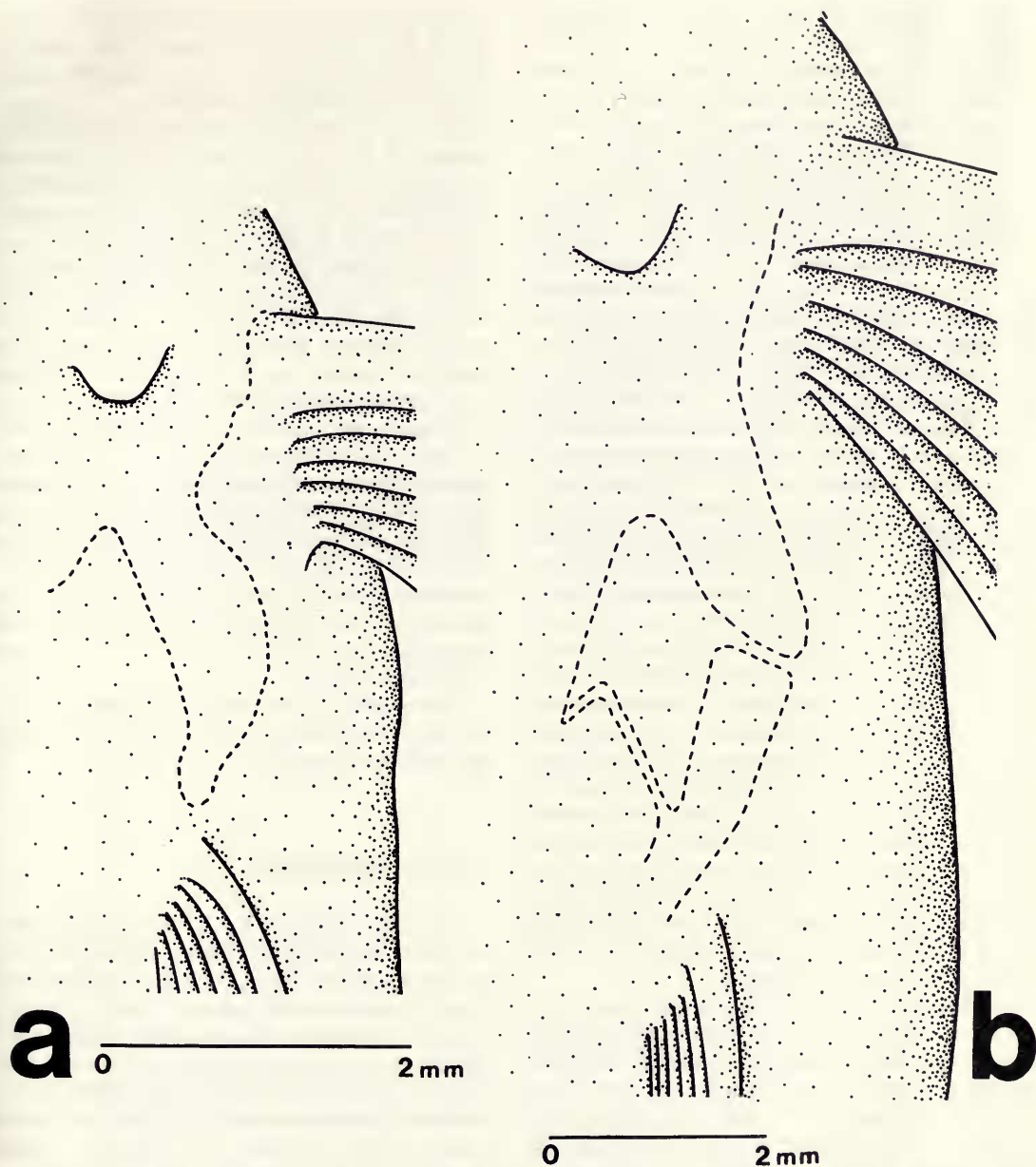


FIG. 10. Ventral view of posterior coracoid process and anterolateral extension of pelvic bone in **a**, *Ernstichthys anduzei*, 35.3 mm standard length, FMNH 94441; and **b**, *E. intonsus*, 49.6 mm standard length, holotype, FMNH 94603.

**Meristic Data for Holotype**—Dorsal fin i,7; anal fin vii,4; pectoral fin I,6, posterior ray branched on left side of fish and simple on right side; pectoral spine with about 16 antrorse serrations on anterior margin and 18 retrorse serrations on posterior margin, proximal posterior serration close to base of spine; short, fleshy filament extending poste-

riorly from tip of pectoral spine; pelvic fin i,5 with first branched ray longest and outer branch of that ray extending posteriorly as short filament; differing from its two congeners in having sixth pelvic-fin ray branched; caudal fin i,7,i with second branched ray of ventral lobe longest; dorsal plates 24; ventral plates 18; pre-anal-fin plates as in Fig-



ure 1f; lateral-line scutes about 64 with 3–4 elongate ossicles anteriorly.

**ECOLOGY**—*Ernstichthys intonsus* was collected in the Río Napo mainstream just upstream from its confluence with Río Añangu Cocha (fig. 7). The Río Napo is wide and relatively shallow there, with broad, sandy beaches exposed at low water. The deepest water which we encountered in the area was about 10 m (measured with a portable echo-sounder), but depth was less than 4 m at the type locality. The strong current, turbid water, and loose-sand substrate probably mean that benthic productivity is relatively low. The extremely numerous barbels of *E. intonsus* seem most likely to be an adaptation for locating food. The ventral mouth and tiny, dorsally situated eyes of *intonsus*, like those of other species of *Hoplomyzontini*, essentially preclude the use of vision for finding food.

Other fishes collected by trawling in the Río Napo mainstream near Añangu were: *Xiliphys leptus* Orcés and *X. melanopterus* Orcés, aspredinid catfishes with tiny, dorsal eyes and numerous, short barbels along the lower lip; an as-yet-unidentified species of *Loricariinae* with profusely branched maxillary barbels; a parasitic trichomyterid catfish of the genus *Paracanthopoma* which has relatively degenerate eyes and no pigmentation; two undescribed species of pimelodid catfishes, both of which may represent new genera; and finally, one specimen of *Pimelodella*. Results from these and trawl samples taken elsewhere in the Río Napo suggest the presence of a specialized deep-river assemblage of fishes of which *E. intonsus* is a part. Most of the fishes taken by trawling in the mainstream were not collected by any other method or in any other habitat.

**COMMENTS**—All previously described species of *Bunocephalinae* have two pairs of relatively stocky mental barbels, contrasting noticeably with the abundant, threadlike barbels of *E. intonsus*. None of the mental barbels of *E. intonsus* can be clearly identified by position or external morphology as homologous to the mental barbels of other species of *Bunocephalinae*. Numerous, threadlike mental and postmental barbels also occur (evolved independently?) in species of *Aspredinichthys*, subfamily *Aspredininae*; the two species in that genus have 7–10 pairs of barbels arranged in a relatively symmetrical pattern (Taylor, 1978).

The superficial, platelike anterior branch of the pelvic bone in *E. intonsus* is unique among aspredinids (fig. 10). The anterior projection of the pelvic bone in other aspredinids is typically hidden below skin and muscle, at least distally. In the

other two species of *Ernstichthys* and other aspredinids with a relatively long posterior coracoid process, the anterior projection of the pelvic bone always lies mesial to the coracoid.

The number of dorsal-fin rays in aspredinids appears to be relatively conservative, with most species having i,4. The exceptionally high number of dorsal-fin rays in *E. intonsus* (i,7) is approached only by that in *Hoplomyzon atrizona* (i,6).

The mentum and mental barbels of nearly all species of aspredinids are covered with tiny tubercles apparently similar to those on most of the rest of the head, body, and at least the leading edges of various fins. Roberts (1982) identified such tubercles from the flank of *Agmus lyriformis* Eigenmann as “partially unculiferous tubercles” or unicellular horny projections. *Ernstichthys intonsus* is distinctive among species of *Bunocephalinae*, at least, in lacking such tubercles on mentum and most of the mental barbels (or they are so reduced that they cannot be seen with a light microscope). Tubercles are abundant, however, on the body, dorsal surface of the head, and leading edges of the maxillary barbels, and pectoral and pelvic fins (fig. 9).

**ETYMOLOGY**—From the Latin *intonsus*, unshaved or bearded, in reference to the extreme proliferation of barbels.

## Acknowledgments

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